

Chapter 5: Finding Information about Products on a Distribution Node

This chapter discusses finding information about products on a distribution node, in particular:

- how to find out which **UPS** products are available on a distribution node
- how to list a product's dependencies as declared on the distribution node
- product file permissions and pathnames for downloading products from *fnkits*¹ via **FTP**
- special instructions for downloading proprietary products from *fnkits*

5.1 Listing Products on a Distribution Node

Both **UPD** and **UPP** can be used to list the product instances installed in a distribution database. We show you how to do this below.

For information on the **KITS** database (on *fnkits*) or the products in AFS space, you can also use the Web. Fill out and submit the form at <http://www.fnal.gov/upc/>. This page can be accessed from the Computing Division's documentation search page (<http://cddocs.fnal.gov/cfdocs/productsDB/docs.html>; scroll down and click on *OSS Product Status Request Page* under **Additional Information**). See the newsgroups `fnal.announce.products` and `fnal.announce.unix` for recent product release information.

5.1.1 Using UPD

The **upd list** command is available to list information about product instances on the server. It just performs **ups list** (described in section 3.2 *Listing Product Information in a Database*) on a distribution database, and uses the same set of options. Two output styles are provided: a formatted one that is easy for users to read, and a condensed one for parsing by a subsequent command or a script.

1. *fnkits.fnal.gov* is the Computing Division's central product server. Its distribution database is generally referred to as **KITS**.

You can specify the information you want contained in the output by including various options (see the reference section 23.11 *ups list* for details). As is standard in **UPS/UPD**, if no chain, version or flavor is specified, and **-a** (for all instances) is not specified, it returns only the instance declared as current for the best-matched flavor of the requesting machine. All the **UPD** commands use the *fnkits* host as the default, which accesses the **KITS** database. Use the **-h <host>** option to specify a different host.

The **upd list** command has the following syntax:

```
% upd list [<options>] [<product>] [<version>]
```

Most of the sample commands listed below use the **-K+** option which condenses the standard output onto a single line. The **-K+** option is described in section 3.2.2 *Condensed Output Style*.

List Current Instance of a Product

Most often, people want to know if there is a current version of a product that will run on their machine. Because of the defaults in place, you can issue the simple command:

```
% upd list [-K+] [<product>]
```

For example, take the product **tex**. To request the condensed output, enter:

```
% upd list tex -K+
"tex" "v3_14159" "SunOS+5" "" "current"
"tex" "v3_1415a" "SunOS" "" "current"
```

List All Instances for One Flavor of a Product

Say, for example, you wanted to know what instances of **ximagetools** were available from *fnkits* for the flavor SunOS+5. You could issue the command:

```
% upd list -af SunOS+5 ximagetools -K+
"ximagetools" "v3_0b" "SunOS+5" "" ""
"ximagetools" "v3_1" "SunOS+5" "" "old"
"ximagetools" "v3_1_1" "SunOS+5" "" ""
```

List All Current Products for Flavor of Machine

For this request, you may just want the product name and version. Use the **-K** option accordingly (output edited for brevity):

```
% upd list -Kproduct:version
"acnet" "v1_0"
"alerts" "v0_1"
"apache" "v1_3_3"
"bash" "v2_02"
...
"ximagetools" "v4_0"
"xntp" "v3_5_93"
"xntp" "v3_4"
"xpdf" "v0_5"
```

Obtain Detailed Listing for a Product Instance

To find all the information associated with a product instance on the server, use the **-l** option (output edited for brevity):

```
% upd list -l tex v3_14159

DATABASE=/ftp/upsdb
      Product=tex      Version=v3_14159      Flavor=SunOS+5
      Qualifiers=""    Chain=current
      Declared="1998-09-10 07.39.47 GMT:1998-09-10
07.39.47 GMT"

Declarer="updadmin:updadmin:updadmin:updadmin"
      Modified="1998-09-10 07.39.47 GMT:1998-09-10
07.39.47 GMT"

Modifier="updadmin:updadmin:updadmin:updadmin"

Home=/ftp/products/tex/v3_14159/SunOS+5/tex_v3_14159_SunOS+5
...
      Action=setup
              setupRequired(tex_files)
              prodDir()
              setupEnv()
              pathPrepend(PATH, ${UPS_PROD_DIR}/bin)

envSet (TEXMFMAIN, ${UPS_PROD_DIR}/share/texmf)
```

5.1.2 Using UPP

UPP requires what we call a *subscription file* which tells it what products to look for on a designated distribution node, and what functions to perform when it detects that new versions of these products have been released there. One of the functions **UPP** can perform is notification. It is therefore a useful tool for keeping abreast of changes/enhancements to your favorite products and to get information on new ones.

Your job is to create a **UPP** subscription file and run the **upp** command. The subscription file has a structure that includes a header and at least one “stanza”. A stanza is bracketed by **begin** and **end**. Each product you want to monitor requires its own stanza (or a separate subscription file, but that is more cumbersome). The **upp** command can be automated and run periodically (for example from **cron**). The information below illustrates how to write a subscription file for the current purpose. For more information, refer to Chapter 7: *Installing Products Using UPP* and Chapter 33: *The UPP Subscription File*.

Sample Subscription File

This example includes a header (the first five lines in the sample file) as required, and one stanza. This file configures **UPP** to send email to a specified address when it detects either of two conditions on the designated distribution server:

- any new product has been added
- a version of **exmh** of flavor SunOS+5.5 has been chained to “current”

The file listing is on the left and comments are provided on the right:

<code>file = upp</code>	This identifies the file as a UPP subscription file.
<code>mail_address = joe@fnal.gov</code>	Send mail notifications to <i>joe@fnal.gov</i> .
<code>dist_node = fnkits.fnal.gov</code>	Use <code>fnkits.fnal.gov</code> as the UPD server node to query.
<code>data_dir = /var/adm/upp</code>	Use <code>/var/adm/upp</code> as the local bookkeeping directory
<code>newprod_notify = T</code>	<code>T</code> is for True; this means yes, notify me of new products appearing on the UPD server node (in this case, on the <i>fnkits</i> node). Set it to any other value (e.g., <code>F</code>) to disable this notification.
<code>begin</code>	Begin stanza for a product.
<code> product = exmh</code>	Identify subscribed product as exmh (the exmh versions remain unspecified in this example, therefore act on all versions for the flavor specified below). You must include this <code>product</code> identifier in the stanza. Optional product instance identifiers not used in this example include <code>qualifiers</code> , <code>prod_dir</code> (product root directory) and <code>chain</code> .
<code> flavor = SunOS+5.5</code>	Identify flavor of product (this is optional)
<code> action = current</code>	List in the following lines of this file one or more functions to perform when any version of exmh of flavor SunOS+5.5 is chained to “current” on <i>fnkits</i> . <code>Action</code> can be set to any chain name, or to the value <code>newversion</code> . <code>Newversion</code> means: perform the following functions when a new version of the product appears on the server.
<code> notify</code>	Send a notification message to <i>joe@fnal.gov</i>
<code>end</code>	End stanza. If you want to add instructions for another product in this same file, start a new stanza with <code>begin</code> .

The UPP Command

You can run **UPP** interactively by issuing the **upp** command. The **upp** command line is very simple:

```
% upp [-v[v...]] <subscription-file-1> [<subscription-file-2>...]
```

The **-v** option requests verbose output; more **v**'s (up to four) provide progressively more verbosity. The **upp** command has no direct output (unless verbosity is turned on), rather it mails a report of any actions taken to the email address specified in the subscription file.

There are no other command options for **upp**; its behavior is controlled entirely by the subscription file(s).

Automate UPP Using cron

You can add a **cron** job that first sets up **UPD** then runs **UPP** with a subscription file (shown here as `upp.subscription`). Here is a sample **sh** script to which we give the filename `upp.launch`:

```
#!/bin/sh
. /usr/local/etc/setups.sh
setup upd
upp /path/to/upp.subscription
```

A sample **crontab** entry to run the `upp.launch` script every night at midnight might look like:

```
0 0 * * * /path/to/upp.launch
```

5.2 Listing Product Dependencies on a Distribution Node

The command **upd depend** is used to return the list of dependencies for the specified product instance(s), as declared in the database in the distribution database. It just performs **ups depend** (described in section 3.3 *Finding a Product's Dependencies*) on the server, and uses the same set of options. As usual, the *fnkits* node is the default, and **-h <host>** allows you to specify a different server. This example shows several layers of dependencies:

```
% upd depend exmh
exmh v2_0_2 -f NULL -z /ftp/upsdb -g current
|__expect v5_25 -f SunOS+5 -z /ftp/upsdb -g current
|  |__tk v8_0_2 -f SunOS+5 -z /ftp/upsdb
|    |__tcl v8_0_2 -f SunOS+5 -z /ftp/upsdb
|      |__mh v6_8_3c -f SunOS+5 -z /ftp/upsdb -g current
```

```
| |__mailtools v2_3 -f NULL -z /ftp/upsdb -g current
|__mimetools v2_7a -f SunOS+5 -z /ftp/upsdb -g current
|__glimpse v3_0a -f SunOS+5 -z /ftp/upsdb -g current
|__www v3_0 -f NULL -z /ftp/upsdb -g current
| |__lynx v2_8_1 -f SunOS+5 -z /ftp/upsdb -g current
|__ispell v3_1b -f SunOS+5 -z /ftp/upsdb -g current
```

Inclusion of the **-R** option returns only the required dependencies; any optional ones are ignored:

```
% upd depend -R exmh
```

```
exmh v2_0_2 -f NULL -z /ftp/upsdb -g current
|__expect v5_25 -f SunOS+5 -z /ftp/upsdb -g current
| |__tk v8_0_2 -f SunOS+5 -z /ftp/upsdb
| |__tcl v8_0_2 -f SunOS+5 -z /ftp/upsdb
|__mh v6_8_3c -f SunOS+5 -z /ftp/upsdb -g current
| |__mailtools v2_3 -f NULL -z /ftp/upsdb -g current
|__mimetools v2_7a -f SunOS+5 -z /ftp/upsdb -g current
```

Another useful option to point out is **-H <flavor>** which allows you to retrieve a dependency list for a flavor other than that of the machine you're using. For example, if you want the dependency list for an IRIX+6 version, but you issue the command from a SunOS+5 machine, you would run the command:

```
% upd depend -H IRIX+6 exmh
```

```
exmh v2_0_2 -f IRIX+6 -z /ftp/upsdb -g current
|__expect v5_25 -f IRIX+5 -z /ftp/upsdb -j -g current
| |__tk v8_0_2 -f IRIX+5 -z /ftp/upsdb -j -g current
|__tk v8_0_2 -f IRIX+5 -z /ftp/upsdb -j -g current
| |__tcl v8_0_2 -f IRIX+5 -z /ftp/upsdb -j -g current
|__tcl v8_0_2 -f IRIX+5 -z /ftp/upsdb -j -g current
|__mh v6_8_3c -f IRIX+6 -z /ftp/upsdb -g current
| |__mailtools v2_3 -f NULL -z /ftp/upsdb -g current
|__mimetools v2_7a -f IRIX+6 -z /ftp/upsdb -g current
|__glimpse v3_0a -f IRIX+6 -z /ftp/upsdb -g current
```

```
|__www v3_0 -f NULL -z /ftp/upsdb -g current
| |__lynx v2_8_1 -f IRIX+6 -z /ftp/upsdb -g current
|__ispell v3_1b -f IRIX+6 -z /ftp/upsdb -g current
```

5.3 Information about Products in KITS

KITS is the commonly used name for the distribution database on the Computing Division's central product distribution server, *fnkits.fnal.gov*. In this section we describe:

- registering your node to download products
- the permissions set on products in this database
- the directory hierarchy of the products area

5.3.1 Access Restrictions and Product Categories

The permissions/access restrictions of products in KITS depend on the category of product. As a product installer, you don't generally know (or need to know) a priori what category the product belongs to, but if you can't download a particular product due to access restrictions, the product category is probably the reason.¹ The categories as defined in the **UPD** configuration for KITS are:

default	The default category is the most commonly used, and is for regular products that are intended for distribution to FTP clients on registered hosts ² . The products are set to group upd, and group-read-only.
fermitools	fermitools products are locally-developed and supported software packages (which are not available elsewhere, generally) that are made available to the public via the FermiTools program ³ . These products are world-readable, and thus accessible by any FTP client.
proprietary	The proprietary category includes products for which Fermilab has a limited number of licenses. Each proprietary product has its own group, and is made

1. You can download the **optionlist** table file to find a product's category. See section 21.6.5 *Flagging Special Category Products Using Optionlist*.

2. See the **Product Distribution Platform Registration Request** form at http://www.fnal.gov/cd/forms/upd_registration.html

3. For more information on FermiTools, see <http://www.fnal.gov/fermitools/>.

	group-readable only to that group. ¹ To gain access, appropriate "site group" and "site gpass" commands must be issued by the FTP client.
<code>fnalonly</code>	The <code>fnalonly</code> category is for products intended only for on-site ftp clients in the <code>fnal.gov</code> domain coming in through <code>ftp://ftp.fnal.gov:9021/</code> . These products are set to group <code>fnalonly</code> , and are group-read-only.
<code>usonly</code>	US-only (United States only) products are accessible only to U.S. government (<code>.gov</code>) and military (<code>.mil</code>) domains coming in through <code>ftp://ftp.fnal.gov:8021/</code> . In general, these are products for which distribution to other countries is illegal. They are set to group <code>usonly</code> , and are group-read-only.

5.3.2 Product Pathnames for FTP Access

Products are arranged (via symlinks) in several different file hierarchies to make browsing easier:

- The `/ftp/products` directory contains products organized by product name and version.
- The `/ftp/KITS` hierarchy contains products organized by operating system. This is the "old-style" hierarchy.
- The `/ftp/pub` hierarchy contains the FermiTools products which are available to the general public.

/ftp/products Area

Within **FTP**, `cd` to `ftp/products` (or to just `products`) in order to access this hierarchy. Under the `/ftp/products` area the product tar files are organized in the structure:

```
<product>/<version>/<flavor>/
```

Product tar files are named according to this convention (intentionally missing the underscore between flavor and qualifiers):

```
<product>_<version>_<flavor><qualifiers>.tar
```

Shown on two lines for better readability, the whole path is:

```
/ftp/products/<product>/<version>/<flavor>/
<product>_<version>_<flavor><qualifiers>.tar
```

1. In general, the group name for the proprietary product is the same as the product name, except that all **vxworks**-related products share a group.

For example, the tar file for the product **xemacs** version v20_4 for SunOS+5 is maintained under `/ftp/products` at:

```
/ftp/products/xemacs/v20_4/SunOS+5/xemacs_v20_4_SunOS+5.tar
```

The product **vxworks** provides an example with a qualifier (68k) tacked onto the end:

```
/ftp/products/vxworks/v5_3c/SunOS+5/vxworks_v5_3c_SunOS+568k.tar
```

/ftp/KITS Area

Within **FTP**, **cd** to `ftp/KITS` (or to just `KITS`) in order to access this hierarchy. Under the `/ftp/KTIS` area the product directories are organized in the structure :

```
<base_flavor>/<product>/<version>/<flavor>/
```

Here you will find links to the product tar files under the `/ftp/products` structure.

/ftp/KITS/pub Area

Within **FTP**, **cd** to `ftp/KITS/pub` (or to `KITS/pub` or just `pub`) in order to access this hierarchy. Under the `/ftp/KTIS` area the product directories are organized in the structure:

```
<product>/<version>/
```

There is no directory level for flavor. Here you will find links to product tar files under the `/ftp/products` structure.

5.4 Special Instructions for Proprietary Products

Some products in `KITS` are flagged as “proprietary” and require a group id and password for installation. This allows us to distribute products in a more controlled fashion. You don’t need to know ahead of time if a given product falls into this category; when you attempt to install a proprietary product, the system will return a message of the form (shown for the product **edt**):

```
Product edt v6_3b SunOS+5 is a proprietary product.
Before it can be installed, you need to obtain a group name
and password for
it by sending a proprietary products request form to
compdiv@fnal.gov
```

```
Have you obtained a group name and password? n
Do you need a proprietary product request form? y
informational: transferred proprietary.form
               from fnkits.fnal.gov:/ftp/products/proprietarylist to
               /your/home/directory/proprietary.form
```

If you request the form, as shown, you will find it downloaded to your home directory in ASCII format for easy editing. Fill out the form and email it to the address listed in the form. Another option is to fill out and submit the Web-based form at:

```
http://www.fnal.gov/cd/forms/proprietary\_form.html
```

If your request is approved, you will receive email with a valid group id and password for the product. You can then install the product, entering these two items when prompted (it’s best to cut and paste the group id and password from the email onto your terminal window to prevent typos¹), e.g.,:

```
Product edt v6_3b SunOS+5 is a proprietary product.
```

1. One case in which it is particularly useful to cut and paste these items is the package **vxworks**, which has multiple proprietary parts. Fortunately the same group id and password is used for each part, but you do need to enter it several times.

...

Have you obtained a group name and password? y

Enter Group Name: edt

Enter Group Pass word: somepassword

informational: beginning install of edt.

The installation proceeds as normal from this point on. If you enter the group id and password incorrectly, or if they have expired (which happens within a few days after they are sent), you will get an error message like the following:

```
...
Enter Group Name: wrong
Enter Group Pass word: wrong
informational: beginning install of edt.
ftp SITE GPASS failed: Group access request incorrect.

error:                                can't                                transfer
/ftp/products/edt/v6_3b/SunOS+5/edt_v6_3b_SunOS+5
      from fnkits.fnal.gov to
      /fnal/ups/prd/edt/v6_3b/SunOS+5
```

If this message appears, try again to be sure the values get entered correctly. If it really doesn't work, reply to the email you received containing the group id and password, and ask to have the product re-opened for you.

